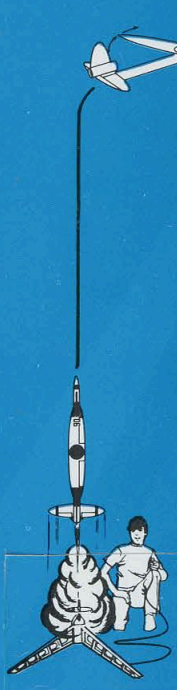
SCISSOR WING TRANSPORT

BOOST CONFIGURATION

GLIDE CONFIGURATION

- **REVOLUTIONARY NEW SCISSOR WING CONCEPT**
- **LOW DRAG BOOST CONFIGURATION**
- **MAIN WING PIVOTS TO GLIDE POSITION**
- **INTERNAL POWER POD WITH STABILIZER FINS**
- **SUPER SST STYLING**
- **GLIDE TIMES OVER 60 SECONDS**



SKILL LEVEL 3

1—Beginner 2—Intermediate 3—Craftsman 4—Advanced 5—Expert

SPECIFICATIONS	
Length 22.7'' (57.7 cm)	Weight w/pod 2.5 oz. (71 g.)
Body Dia. 0.976'' (24.8 mm)	Weight w/o pod 1.8 oz. (51 g.)
	Wing Span 16'' (40.6 cm)

RECOMMENDED ENGINES

B4-2 B6-2 C6-5

Use B4-2 for first flights

Glider Recovery

Engines and launcher not included.

#1265

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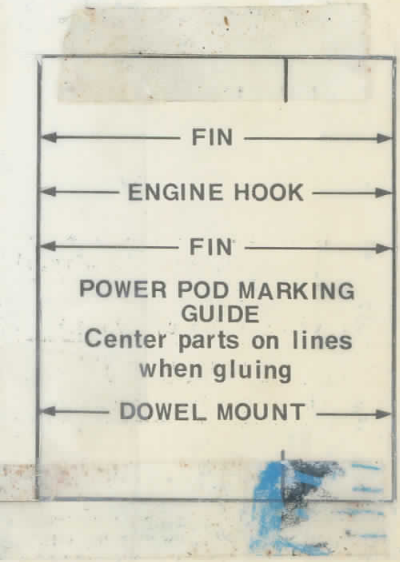
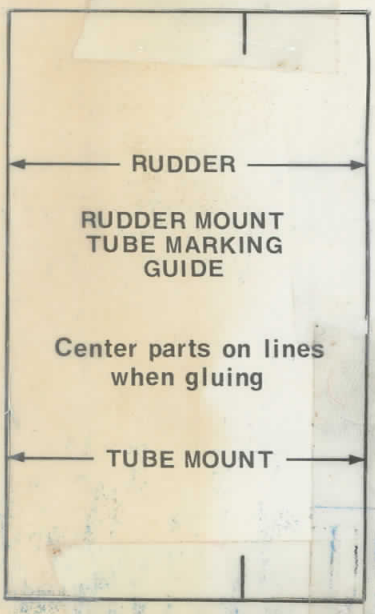

FIN
ENGINE HOOK
FIN
POWER POD MARKING GUIDE
Center parts on lines when gluing
DOWEL MOUNT


RUDDER
RUDDER MOUNT TUBE MARKING GUIDE
Center parts on lines when gluing
TUBE MOUNT

ESTES®

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Recommended for Ages 10 to Adult. Adult Supervision Suggested for Those Under 12 Years of Age When Flying Model Rockets.

1 MODEL KIT
Paint and Glue not included.
1 MODÈLE RÉDUIT
Peinture et Colle non comprises.

Flying Model Rocket

FLY ESTES
Model Rockets

A Rewarding Hobby for Ages 10 to Adult.

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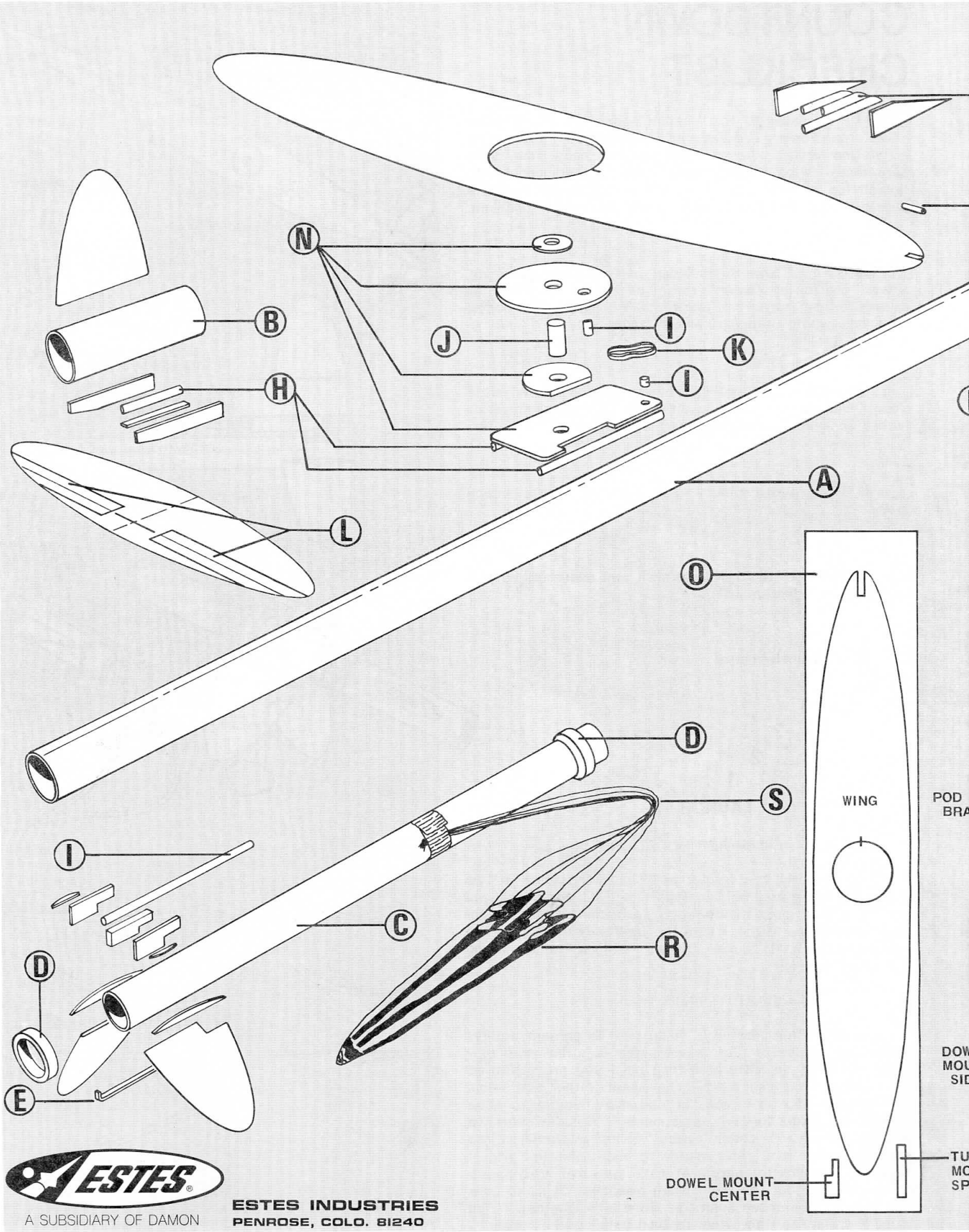

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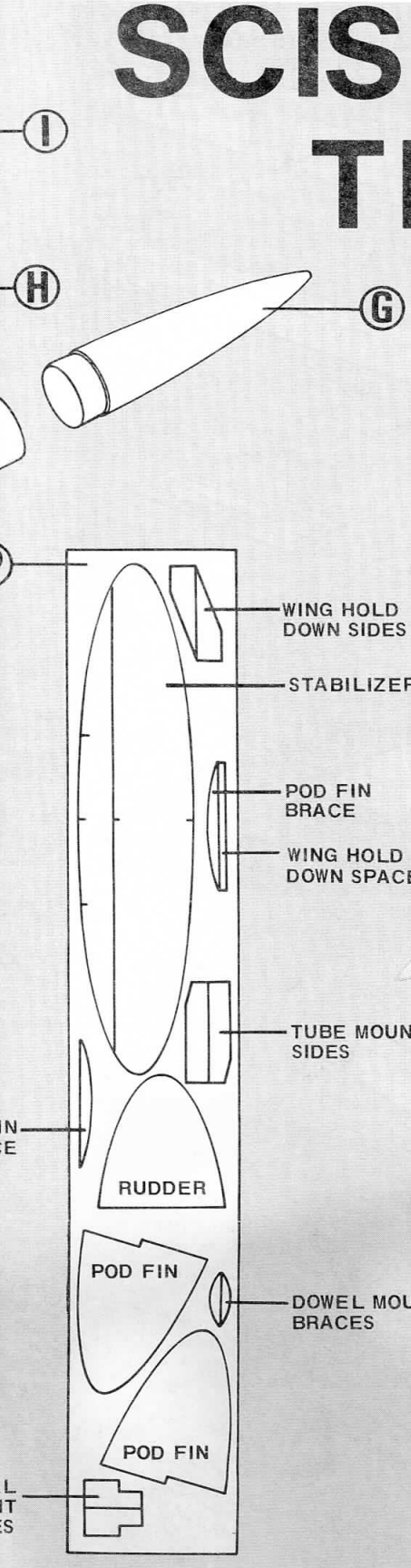
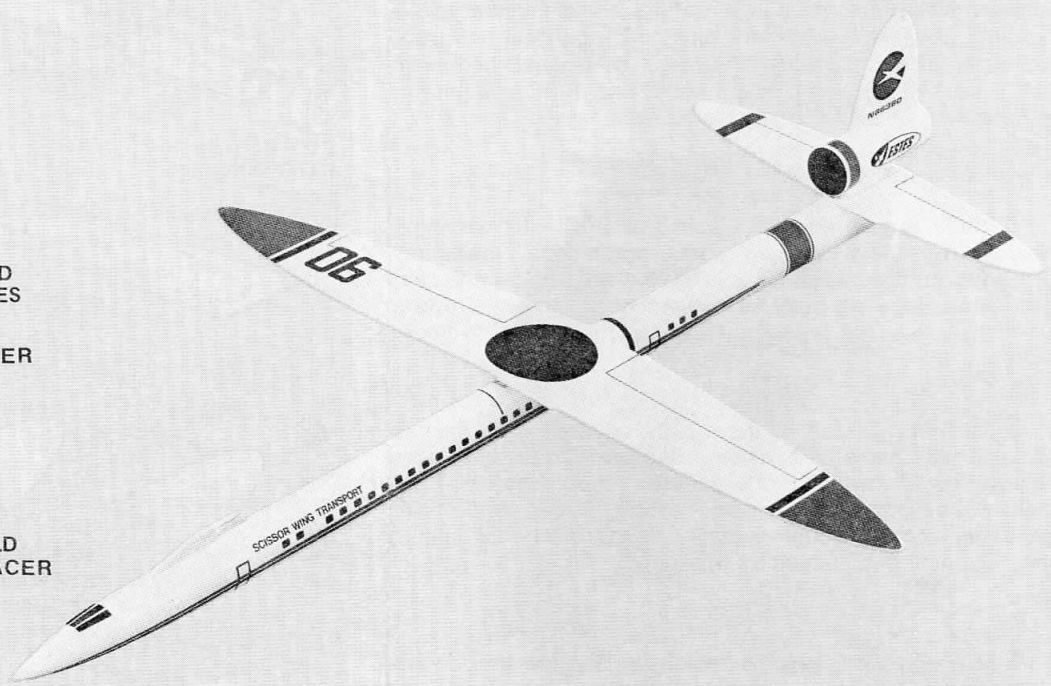
SCISSOR WING TRANSPORT





In addition to the materials below, you will need white glue, model knife or single edge razor blade, ruler, pencil, sandpaper, razor saw, paint, masking tape, and tweezers.

NOTE:

Read all instructions first. Make sure you have all kit parts, plus the tools and supplies listed. Then start construction, checking off each step as you complete it. Let glue joints dry thoroughly before disturbing.

PARTS LIST

A	1	Body Tube BT-50 (18" long)	30352		
B	1	Body Tube BT-50J (2-3/4" long)	30362		
C	1	Body Tube BT-20L (12" long)	30330		
D	2	Centering Rings AR-2050	30164		
E	1	Engine Hook EH-2	35025		
F	1	Elastic Thread ET-1	85772		
G	1	Nose Cone BNC-50Y	70266		
H	3	Launch Lugs LL-2B	38178		
I	2	1/8" Dowels WD-1C	85906		
J	1	1/4" Dowel NCD-1	32050		
K	2	Rubber Bands CSB-1	44060		
L	2	Tape Hinges TH-1	45117		
M	1	Self-Adhesive Reinforcing Paper PRM-1A	84852		
N	1	Die-Cut Plywood Sheet	32277		
O	1	1/8" Thick Die-Cut Balsa Sheet	32278		
P	1	1/16" Thick Die-Cut Balsa Sheet	32281		
Q	1	Decal Sheet	37065		
R	1	Parachute	85562		
S	1	Shroud Line Length SLT-72	38237		
T	1	Set of 6 Tape Discs TD-3F	38406		
U	1	Set of Instructions	83130		
V	1	Pattern Sheet	83132		

ASSEMBLY INSTRUCTIONS

Read the entire assembly instructions carefully before beginning work on your rocket. Then start construction, checking off each step as it is completed.

START WITH THE POWER POD

☒ **1** Cut power pod marking guide from back of bag panel and wrap it around BT-20L body tube as shown. Mark tube as shown. Mark tube at each arrow point and connect these marks with straight lines. Mark tube 1/2 inch from unmarked end. Mark tube (end with fin lines) on engine hook line 2-1/2'' and 1-7/16'' from end. Make one 1/8'' slit on engine hook line at 2-1/2'' mark as shown.

☒ **2** Place engine hook EH-2 in the 1/8'' slit and hold in place with a piece of tape. Cut a notch 1/32'' deep and 3/32'' wide on the inside of one of the AR-2050 centering rings. Glue rings on body tube exactly as shown. Add a layer of glue over the tape and front portion of engine hook.

☒ **3** Sand both sides of die-cut balsa sheets to smooth surfaces and to make part removal easier. Carefully remove following parts from die-cut sheets: pod fins; pod fin braces; dowel mount sides; dowel mount braces; and (1/8'' thick sheet) dowel mount center. Sand lightly to smooth edges. Do not round edges at this point.

☒ **4** Glue pod fin braces to pod fins. Be sure braces are at right angles to fins and are on correct sides of fins as shown.

☒ **5** Glue pod fins on fin lines on BT-20L. Be sure fin braces are oriented as shown in rear view of power pod.

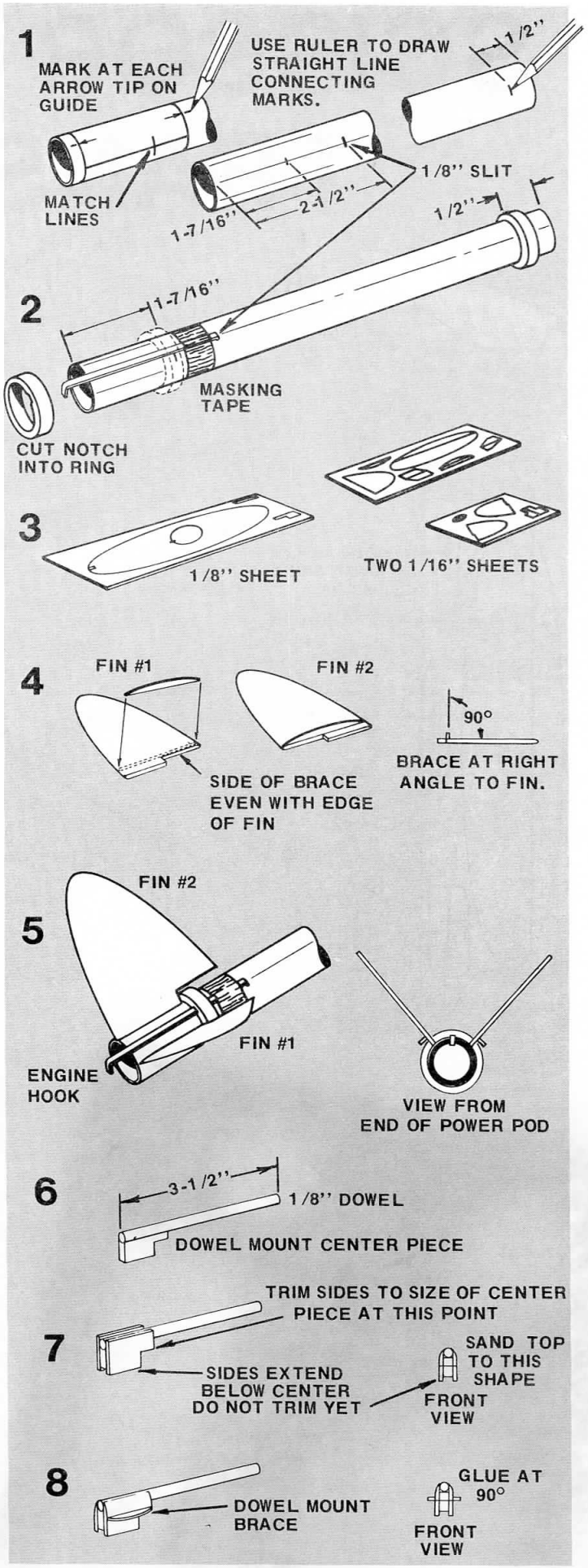
☐ **6** Cut a 3-1/2'' long piece from one of the 1/8'' dowels. Save remaining length of dowel for later use. Glue the 3-1/2'' long dowel to dowel mount center piece (from 1/8'' sheet.)

☐ **7** Glue dowel mount side pieces to assembly from step 6. They extend below center piece as shown. Sand to cross section shown.

☐ **8** Glue dowel mount braces to dowel mount sides. Do not glue dowel mount to power pod yet. This will be done later to assure proper alignment.

WING AND WING PIVOT ASSEMBLY

Note: Refer to drawings for location of die-cut balsa parts used in further construction. Be careful when removing parts from sheets to avoid damage.



☒ **9** Remove die-cut wing from 1/8'' sheet. Remove circle from center of wing. Lightly sand edges of wing and round slightly. Do not round edges of center hole or slot at end.

☒ **10** Remove the four die-cut plywood pieces from their sheet. Sand lightly to gently smooth surfaces and edges.

☒ **11** Cut 1/4'' dowel to a length of 9/16''. Leave one end square and sand upper 1/16'' of the other end to a rounded shape.

☒ **12** Check fit of 1/4'' dowel in 1/4'' diameter holes in plywood pieces. It should be a smooth sliding fit in all pieces with a relatively loose fit in piece #3. Piece #3 must rotate freely around dowel for proper operation of wing. Sand as necessary for proper fit of parts.

☒ **13** Check fit of a 1/8'' dowel in 1/8'' diameter holes in plywood pieces #1 and #3. Sand as necessary for a smooth, snug fit.

☒ **14** Glue 9/16'' long dowel from step 11 into piece #1. Be sure square end is flush with bottom of piece #1 and dowel is at right angles to piece #1.

☒ **15** Be sure surfaces of piece #2 are smooth. Glue to assembly from step 14 as shown. Do not get any glue on upper surface of piece #2 or on dowel extending above piece #2. Be sure flat edge of piece #2 matches edge of slot in piece #1. Sand as necessary to insure that piece #2 does not extend over edge of piece #1.

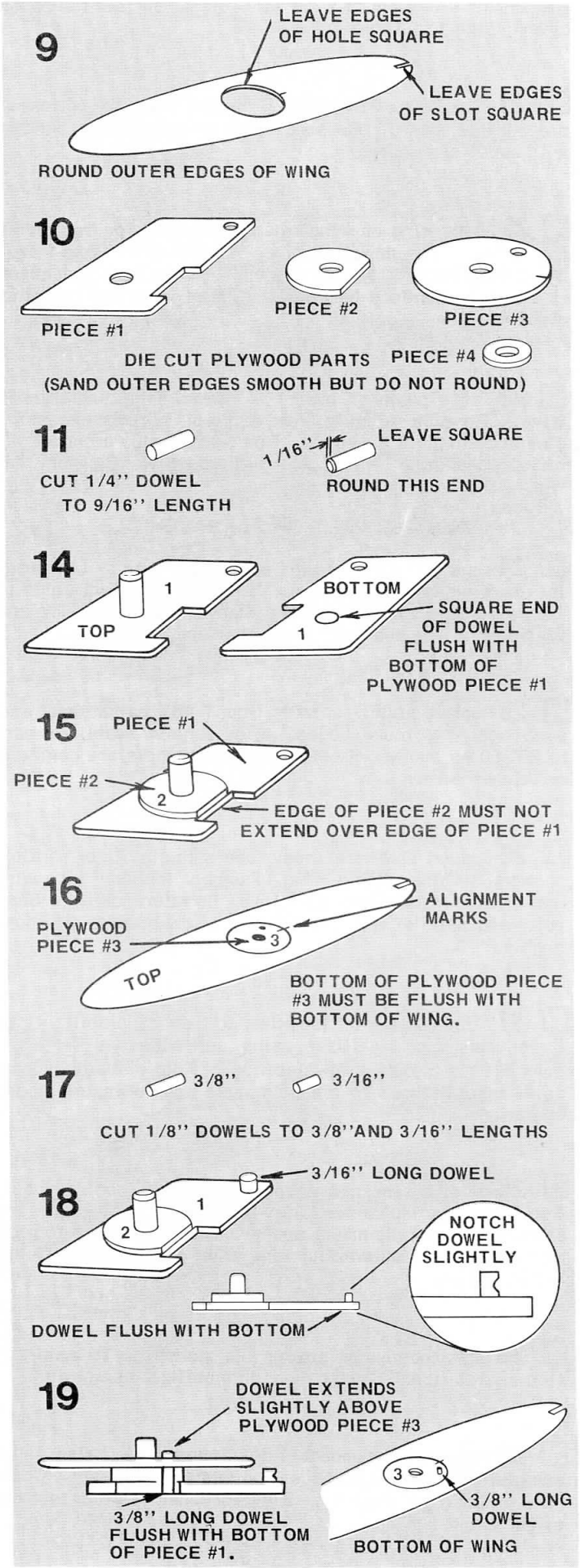
☒ **16** Check fit of piece #3 in center of wing. This should be a snug, even fit. Glue piece #3 into wing flush with bottom of wing. Be sure alignment marks in wing and piece #3 are lined up and the 1/8'' hole in piece #3 is oriented as shown.

☒ **17** Cut one 3/16'' length and one 3/8'' length from the 1/8'' dowel. Leave ends smooth and square.

☒ **18** Glue 3/16'' long dowel into piece #1 as shown. Bottom of dowel should be flush with bottom of piece #1. Use modeling knife or single edge razor blade to cut a slight notch on the forward side of dowel.

☒ **19** Place wing on wing mount assembly from step 18. Place 3/8'' long dowel in 1/8'' hole in piece #3 and press through until bottom of dowel is even with bottom of piece #1. Remove wing from wing mount and glue dowel firmly in place in piece #3.

☒ **20** Cut a 1-1/4'' square from the self-adhesive reinforcing paper PRM-1A. Remove backing paper and apply



the square to bottom of wing as shown. Cut out the paper covering the 1/4'' hole in piece #3.

☐ **21** Glue two of the LL-2B launch lugs to bottom of piece #1 as shown. Be sure sides of launch lugs line up with edges of plywood.

☐ **22** Place wing on wing mount and check for free pivoting action. The dowel in piece #3 will limit wing travel by striking ends of slot in piece #1. Make sure that there is a slight clearance between bottom of wing and dowel in piece #1.

☐ **23** Press piece #4 over 1/4'' dowel protuding through wing. Be sure wing is free to pivot without excessive clearance in pivot assembly. Run bead of glue around 1/4'' dowel as shown. Allow to dry thoroughly. Be sure that wing still pivots freely.

MAIN ASSEMBLY OF GLIDE VEHICLE

☐ **24** Mark BT-50 body tube full length with a line parallel to its sides. A drawer sill makes an excellent guide to insure a straight, parallel line. Mark BT-50 at 1-1/2'' and 9'' from one end and 1/8'' from other end.

☐ **25** Remove stabilizer parts from 1/16'' balsa sheet and sand lightly to round edges. Glue largest stabilizer part to BT-50 as shown. Be sure alignment marks are centered on reference line.

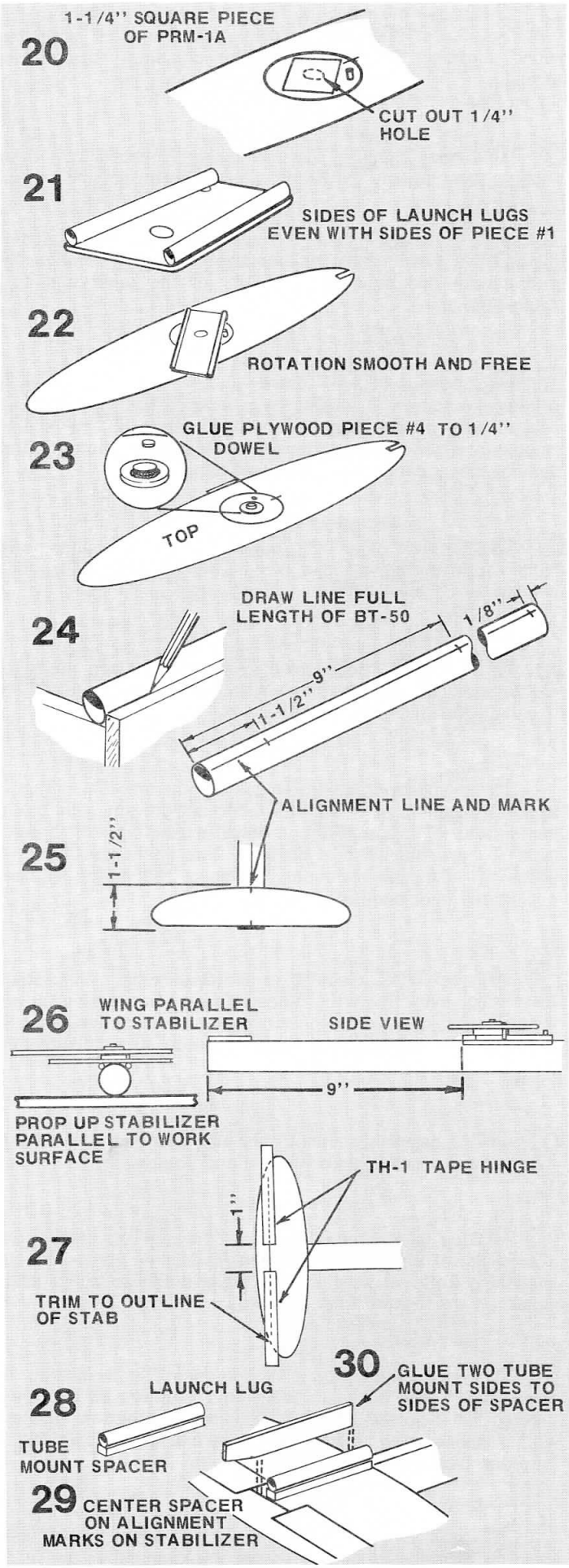
☐ **26** Support stabilizer/body tube with stabilizer parallel to work surface. Glue wing assembly to body tube with rear of wing mount touching 9'' mark on reference line. Support wing parallel to stabilizer and allow glue to dry thoroughly.

☐ **27** Attach elevator (smaller portion of stabilizer) to larger portion of stabilizer using self-adhesive TH-1's. Trim TH-1's to outline of stabilizer. Fold elevator up and down several times to crease hinges and to insure proper operation.

☐ **28** Remove tube mount spacer from 1/8'' balsa sheet. Cut remaining launch lug into two pieces, one piece the same length as tube mount spacer. Glue this piece to tube mount spacer as shown and save short piece of launch lug for wing slot.

☐ **29** Glue tube mount spacer and launch lug to main portion of stabilizer. Center them on stabilizer as shown.

☐ **30** Remove tube mount sides from 1/16'' balsa sheet and glue to tube mount spacer and launch lug as shown. Be sure to position properly. Elevator must be free to raise slightly.



☒ **31** Cut rudder mount tube marking guide from back of bag panel and wrap it around the BT-50J. Mark tube at each arrow point and connect these marks using a straight edge.

☒ **32** Remove rudder from 1/16" balsa sheet and glue to BT-50J. Center on rudder line. After glue dries, glue rudder and tube to tube mount. Center on tube mount and be sure rudder is at right angles to stabilizer.

☒ **33** Cut two 2-1/4" lengths and one 1-5/8" length from the remaining 1/8" dowels. Glue together as shown. Remove wing hold-down spacer from 1/16" balsa sheet and glue to dowels as shown.

☒ **34** Remove wing hold-down sides from 1/16" balsa sheet and glue to dowels as shown. After glue dries, use razor saw to cut off excess dowels. Sand wing hold-down to a rounded, streamline shape. Leave bottom square.

☒ **35** Slip nose cone BNC-50Y into forward end of BT-50 (Do not glue.). Temporarily spot glue or tape wing hold-down in place.

☒ **36** With wing in "glide" position (at right angles to body tube), check the center of gravity (balance point) location. It should be 8-3/4" to 9" from rear of body tube. If it is not, add or remove weight from the nose cone to achieve this location. Weight can also be added inside the rudder mount tube, if necessary.

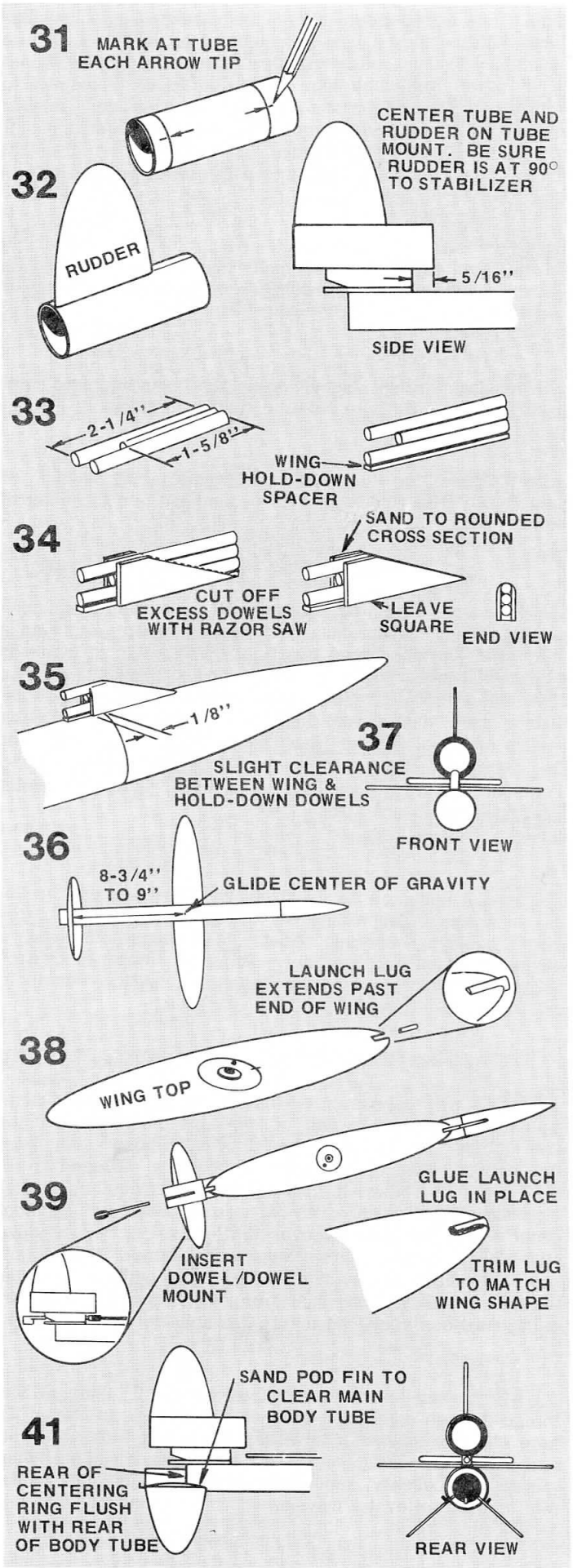
☒ **37** Glue nose cone and wing hold-down in place. Center hold-down on body tube reference line. Be sure that wing tip will swing freely between dowels of wing hold-down.

☒ **38** Place remaining piece of launch lug in slot at end of wing. The launch lug will extend past end of wing. Do not trim or glue launch lug yet.

☒ **39** Position wing in "boost" position (with its span parallel to body tube) and insert dowel (from step 8) through launch lug in rudder tube mount into launch lug in wing slot. Adjust launch lug in wing slot until there is no binding. Mark launch lug position and remove dowel. Glue launch lug in position and trim to match wing outline.

☒ **40** Slip power pod into rear of main body tube fully (both centering rings inside body tube). If necessary, sand centering rings for a loose sliding fit in body tube. There should be no binding. The engine hook should be centered on the bottom of the body tube.

☒ **41** Fit dowel mount to power pod. Dowel should extend through launch lug in rudder tube mount. The rear of the dowel mount should be even with rear of power pod



tube. The dowel mount should be extended over the elevator, holding it in a nearly horizontal position. It will be necessary to trim bottoms of dowel mount sides for proper fit of dowel in launch lug. It will also be necessary to lightly trim forward portion of dowel mount braces in order to clear tube mount sides properly. When you are sure that you have all parts fitted properly, mark location of dowel mount. Remove power pod and glue dowel mount in position on it.

☒ **42** Sand edges of power pod fins to a rounded shape. Do not round portion of fins between fin braces and power pod tube.

☐ **43** Check model and do your final sanding and reinforcing of glue joints in preparation for finishing.

☐ **44** Assemble power pod parachute by directions on parachute. Glue and tape ends of shroud lines to center of power pod.

PAINTING AND FINISHING

☐ **45** Before finishing, be sure all glue joints are completely dry. For optimum performance, keep weight to a minimum. We recommend two light spray coats of white on glide vehicle and rear of power pod. Follow with two light spray coats of black on rear of power pod. If you desire a more impressive display appearance, check back issues of Model Rocket News for finishing hints and tips. Be extremely careful when painting the Scissor Wing Transport to avoid "freezing" wing pivot. Wing must pivot freely for proper operation.

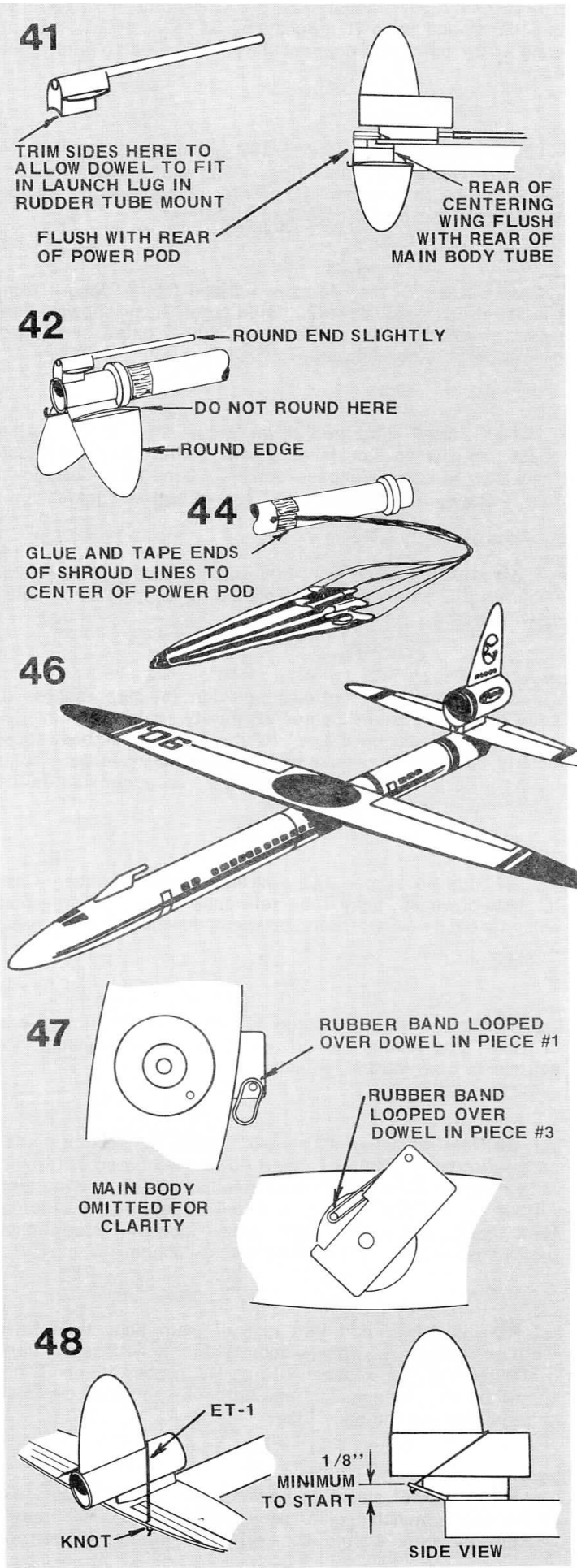
APPLYING THE DECALS

☐ **46** Cut out each decal carefully. To transfer, dip decal in water for approximately 30 seconds, or until decal slides easily on backing paper. Slide decal off paper to desired surface and blot dry. Refer to figure 46 and kit illustrations for proper decal locations. Allow decals to dry about 24 hours.

INSTALLING RUBBER BAND AND ELASTIC THREAD

☐ **47** It will be easier to install the rubber band (wing actuator) if you use a pair of tweezers. With the wing in the "glide" position (at right angles to body tube), hook one end of rubber band (There is a spare included in the kit) over 1/8" dowel in plywood piece #1 (notched dowel). Now move wing to about 45 degrees to body tube and hook other end of rubber band over 1/8" dowel extending down from wing. Remove twists from rubber band. Wing should now automatically pivot into "glide" position when released. Check for free operation. If wing pivot binds, try using a silicon spray lubricant (Use sparingly.).

☐ **48** Tie two knots in elastic thread 3-1/2"apart. Stretch thread through notches in elevator and rudder as shown. Be sure elevator moves up against tube mount sides and that rear of elevator is at least 1/8" above the horizontal when raised. If necessary, sand lower portion of tube mount sides to allow more elevator movement.


41
TRIM SIDES HERE TO ALLOW DOWEL TO FIT IN LAUNCH LUG IN RUDDER TUBE MOUNT
FLUSH WITH REAR OF POWER POD
REAR OF CENTERING WING FLUSH WITH REAR OF MAIN BODY TUBE
42
ROUND END SLIGHTLY
DO NOT ROUND HERE
ROUND EDGE
44
GLUE AND TAPE ENDS OF SHROUD LINES TO CENTER OF POWER POD
46
47
RUBBER BAND LOOPED OVER DOWEL IN PIECE #1
RUBBER BAND LOOPED OVER DOWEL IN PIECE #3
MAIN BODY OMITTED FOR CLARITY
48
ET-1
KNOT
1/8" MINIMUM TO START
SIDE VIEW

COUNTDOWN CHECKLIST

☐ **11** Pivot wing to the "boost" position. Wrap parachute around power pod and slip into main body tube using a twisting motion. As you slip pod into body tube, make sure dowel slips through launch lug in tube mount into launch lug in wing tip. Also make sure dowel mount is over elevator, holding it in a nearly horizontal position.

☐ **10** For your first flight insert a B4-2 into power pod. Check location of "boost" center of gravity. It should be at least 5-3/4" forward of rear of main body tube. If necessary, add weight to forward end of power pod.

☐ **9** Install an igniter. Disarm launch control and slide model over launch rod (use either of the launch lugs attached to wing mount). Connect igniter clips to igniter.

☐ **8** Clear launch area. Alert everyone in the launch area.

☐ **7** Check for low flying aircraft and unauthorized personnel in launch area.

☐ **6** Arm launch control.

☐ **5**

☐ **4**

☐ **3**

☐ **2**

☐ **1**

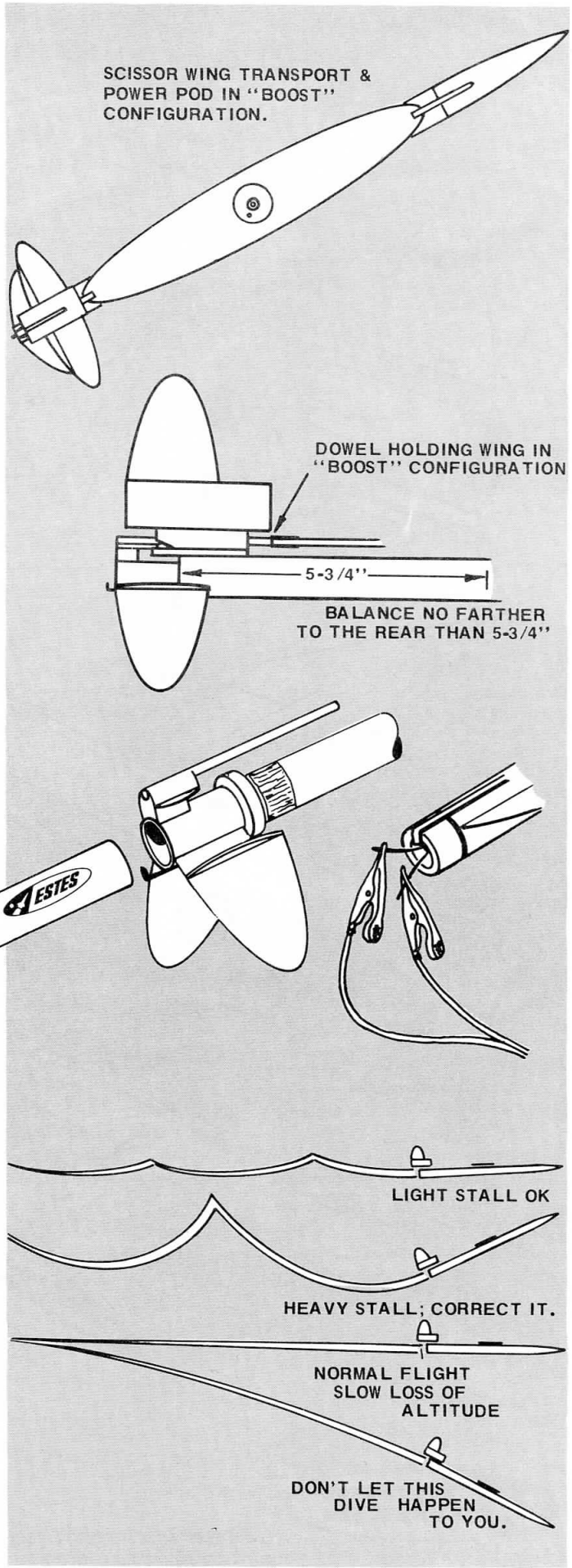
LAUNCH

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch control, remove the model, clean the igniter residue from the nozzle, and install a new iginter. Follow the launching procedure again.

ADJUSTMENT HINTS

Observe glide carefully. If no stall is present, lightly sand lower edges of tube mount sides to allow more elevator movement (a little at a time until you are satisified with glide). If a heavy stall is present, either add shims to limit elevator movement or add more weight to nose cone. Use rudder for turn adjustments. If model seems to turn too sharply: 1) check "glide" center of gravity; 2) be sure that wing is at right angles to body tube in "glide" position; 3) check for warps; 4) make sure that wing snaps firmly into "glide" position when released; 5) make sure that model is balanced spanwise (from side to side). (Add paint or weight to light wing tip until balanced.)


SCISSOR WING TRANSPORT & POWER POD IN "BOOST" CONFIGURATION.
DOWEL HOLDING WING IN "BOOST" CONFIGURATION
5-3/4"
BALANCE NO FARTHER TO THE REAR THAN 5-3/4"
ESTES
LIGHT STALL OK
HEAVY STALL; CORRECT IT.
NORMAL FLIGHT SLOW LOSS OF ALTITUDE
DON'T LET THIS DIVE HAPPEN TO YOU.